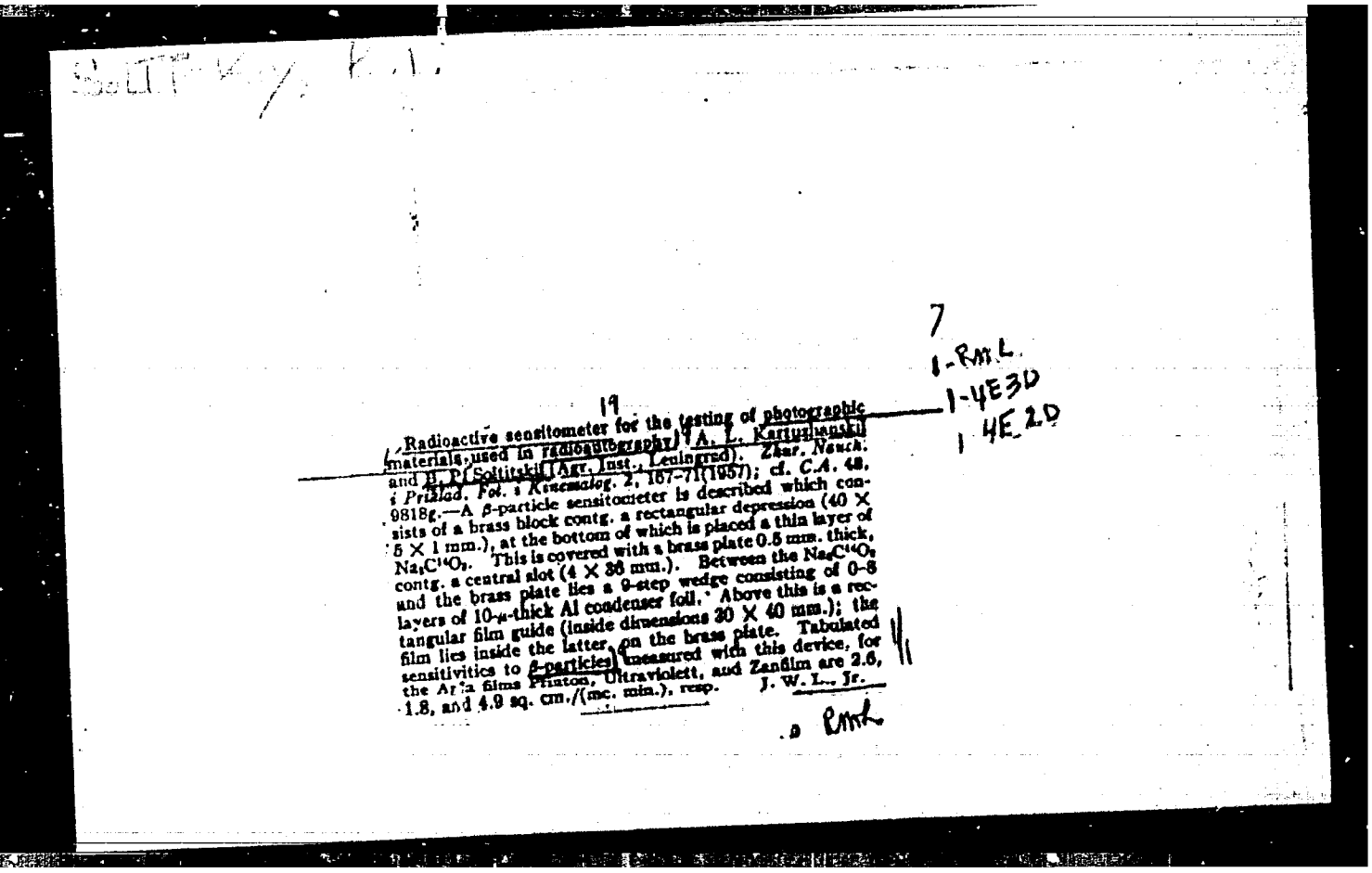

19

Radioactive sensitometer for the testing of photographic materials used in radiography. A. L. Kartuzhanskii and B. P. Soltitskii (Agr. Inst., Leningrad). *Zhur. Nauch. i Prikład. Fot. i Kinematog.* 2, 167–71 (1957); cf. *C.A.* 48, 9818g.—A β-particle sensitometer is described which consists of a brass block contg. a rectangular depression (40 × 5 × 1 mm.), at the bottom of which is placed a thin layer of $Na_2C^{14}O_3$. This is covered with a brass plate 0.5 mm. thick, contg. a central slot (4 × 36 mm.). Between the $Na_2C^{14}O_3$ and the brass plate lies a 9-step wedge consisting of 0–8 layers of 10-μ-thick Al condenser foil. Above this is a rectangular film guide (inside dimensions 30 × 40 mm.); the film lies inside the latter, on the brass plate. Tabulated sensitivities to β-particles measured with this device, for the Ar'a films Pliatom, Ultraviolett, and Zandfilm are 2.6, 1.8, and 4.9 sq. cm./(mc. min.), resp. J. W. L., Jr.

7
1-RmL.
1-4E3D
1 4E 2D

SOLTITSKIY B P.

Sensitivity of photographic layers to β-emission of various energies. A. L. K[illegible]tuzhanski[illegible] [illegible] B. P. Soltitski [illegible] Inst., Leningrad) Zhur. Nauch. i Priklad. Fot. i Kine [illegible]

[illegible]

4

PA - 2552

AUTHOR SOLTITSKIY,B.P., and KARTUZHANSKIY,A.I.

TITLE Measurement of Very Low Concentrations of α -Radiators in Vegetable Objects by means of Thick Layer Photoplates. (Izmereniye ves'ma malykh kontsentratsiy α -izluchateley v rastitel'nykh ob"yektakh s pomoshch'yu tolstosloynykh fotoplastinok, Russian)

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 3, pp 606 - 613 (U.S.S.R.)
Redeived: 4 / 1957 Reviewed: 5 / 1957

ABSTRACT: The method of V.Barnes (Chemistry, Vol 27, Nr 1, 43, 1953) was applied to the field of very low concentrations, i.e. which were smaller by some few magnitudes. The corresponding methodology is described and the analysis of possible errors in connection with its application is given. In addition, details on the application of this method for biological problems are included. At first the setting up of the comparative measures is described. U^{238}, Ra^{226}, and Po^{210} in form of a nitrate were used. Sand, filter paper, and water served as carriers. Photographic evaluation and measuring of the plates is described. For the registration of the α -particles highly sensitive plates (destined for β -radiations) were used. An area of 1 cm^2 was eliminated and the traces were counted. The process of eliminating the parasitic traces is described. Calibration of the photo plates was carried out with the aid

Card 1/2

PA - 2552

Measurement of Very Low Concentrations of α-Radiators in Vegetable Objects by means of Thick Layer Photoplates.

of a Po^{210}-radiator set in two different ways. Either the time of irradiation or activity was varied. The method was applied to the investigation of gene-transmission in the case of wheat, peas etc. The transmission of symptoms on the following generation was indispuatbly ascertained. Similar investigations were carried out with rabbits and fowls.
(3 tables and 4 illustrations)

ASSOCIATION: Agricultural Institute Leningrad
PRESENTED BY:
SUBMITTED 28.11.1955
AVAILABLE: Library of Congress.

Card 2/2

SOV/120-58-2-34/37

AUTHORS: Soltitskiy, B. P., Fadeyev, N. P. and Panashchenko, V. A.

TITLE: A Device for Cutting Thick Plates (Prisposobleniye dlya reski tolstosloynykh plastinok)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 2, p 112 (USSR)

ABSTRACT: In cutting thick plates there is the danger of the plates becoming contaminated by radioactive materials. In the process of cutting, the plates should not come into contact with any surface, or the fingers of the experimenter, which are not absolutely free from contamination by radio-active substances. The device shown in Fig.1 may be used to cut such plates without the danger of contamination by radi active substances. This is achieved by using two plexiglass plates with longitudinal grooves 2 mm deep which are built into a wooden body 12 x 14 x 15 cm in size. The plate to be cut is attached to this body and is then moved into the cutting and breaking system. The breaking device

Card 1/2

[illegible]/[illegible]-34/37

A Device for Cutting Thick Plates.

contains a holder which stops the plate from falling out. Complete sectional drawing of the device is shown in Fig.1. There is 1 figure only.

ASSOCIATION: Institut radiatsionnoy gigiyeny (Institute of Radiation Hygiene)

SUBMITTED: July 16, 1957.

1. Radiation--Safety measures 2. Cutting tools--Operation

Card 2/2

AUTHOR: Kartuzhanskiy, A.L.; Soltitskiy, B.P. SOV 77-3-4-19/23

TITLE: A Review of Soviet Works on the Photographic Action of Ionizing Particles (Obzor sovetskikh rabot po fotograficheskomu deystviyu ionizuyushchikh chastits)

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1958, Vol 3, Nr 4, pp 299-306 (USSR)

ABSTRACT: The article is limited to a review of those works by Soviet scientists dealing with the basic principles of the photographical method and with explaining the nature of the photographic action of ionizing particles. The practical part is devoted to work connected with the development of new emulsions for use in nuclear physics to record the passage of particles. L.V. Mysovskiy, N.A. Perfilov and A.P. Zhdanov were active in this field and V.V. Alpers produced an emulsion chamber. The theoretical side is covered by works dealing with the mechanism of the photographic emulsion itself: the loss of energy by the particles among the emulsion crystals, latent image formation, the size of photosensitive centers, methods of redistribution Ag among centers to increase their power of developing latent images, the dispersion of centers, intensification of highly-dispersed latent images

Card 1/ 2

by further exposure, regression of latent images and the sensitivity of nuclear emulsions. The scientists active in these fields are: K.S. Bogomolov, V.V. Alpers, A.P. Zhdanov, Shur, A.L. Kartuzhanskiy, V.N. Zharkov, I.A. Kovner, Gershel', P.V. Mayklyar, S.G. Grenishin. L.M. Biberman, I.A. Fomina, B.P. Soltitskiy, N.A. Perfilov, G. Treubergenova, B.I. Kazantsev. There are 53 references, 51 of which are Soviet, 1 German and 1 French.

1. Particles--Photographic analysis 2. Photographic emulsions --Development 3. Photographic emulsions--Properties

SOV/77-4-4-13/19

21(1), 23(3,5)
AUTHORS: Kartuzhanskiy, A.L. and Soltitskiy, B.P.

TITLE: Letter to the Editor; The Effect of Not Substitutability at Photographic Activity of β-Radiation

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1959, Vol 4, Nr 4, pp 301-303 (USSR)

ABSTRACT: The authors state, that the effect, described by Ray and Stevens [Ref 1], demands a dependency in particular between its value, the limit of its existence on the one hand and the ionizing power of β-particles, the sensitivity of the emulsion on the other hand. The tests were made on electronographic plates, which are sensitive towards β-particles, low sensitive diapositive plates, and on nuclear emulsion type R NIKFI, with the highest sensitivity of all emulsions towards particles. As radiation source isotopes with pure β-radiation were used: P^{32} and C^{14} in Na_2HPO_4 and Na_2CO_3. The results confirmed the existence of the

Card 1/2

Letter to the Editor; The Effect of Not Substitutability at Photographic Activity of β-Radiation

effect and the reason for non-substitutability, not depending on the choice of radiation. There are 2 graphs and 4 references, 3 of which are Soviet and 1 English.

ASSOCIATION: Leningradskiy sel'skokhozyaystvennyy institut (Leningrad Agriculture Institute)

SUBMITTED: April 5, 1959

Card 2/2

KARTUZHANSKIY, A.L.; SOLTITSKIY, B.P.

Sensitizing photographic materials by triethanolamine to improve the technique of autoradiography. Biofizika 6 no. 1:126-127 '61. (MIRA 14:2)

1. Leningradskiy sel'skokhozyaystvennyy institut.
(ETHANOL) (AUTORADIOGRAPHY) (PHOTOGRAPHIC CHEMISTRY)

KARTUZHANSKIY, A.L.; SOLTITSKIY, B.P.

Specimen for determining the resolving power of photographic layers exposed to nuclear radiation. Zjur.nauch.i prilk.fot. i kin. 7 no. 3:223-224 My-Je '62. (MIRA 15:6)

1. Leningradskiy institut sovetskoy torgovli imeni F.Engel'sa.
(Photographic emulsions--Testing) (Radiography)

KARTUZHANSKIY, A.L.; SOLTYNSKIY, B.P.

Resolving power of photographic layers exposed to nuclear radiation. Usp. nauch.fot. 10:253-261 '64. (MIRA 17:10)

KARTUZHANSKIY, A.L.; SOLTITSKIY, B.P.

Principles of sensitometry plotting for photographic layers exposed by β-radiation. Zhur. nauch. i prikl. fot. i kin. 9 no.3:212-214 My-Je '64. (MIRA 18:11)

SOLTRI, P.

Creasing cotton on scutchers, p. 248, MAGYAR TEXTILTECHNIKA (Textilipari Muszaki es Tudomanyos Egyesulet) Budapest, No. 7, July 1956.

SOURCE: EEAL LC Vol. 5, No. 11, November 1956

Titration of acetates F. M. Sol'ts. *Ukrain. Gosudarst. Inst. Eksptl. Farm. (Kharkov), Konsul'tatsionnye Materialy* 1939, No. 2, 56-7.—S. proposes a modification of the usual method for titrating acetates. Dissolve a known amt. of the AcOK salt (approx. 1.0 g.) in a 250-ml. flask with a small amt. of water and dil. to the mark. [illegible] ml. of the soln. add not more than 2 drops of 0.1 [illegible] soln. of tropeolin 00 and titrate with 0.5 N H_2SO_4 [illegible] the color obtained with a standard soln. With thymo[illegible] blue as indicator the standard soln. can be omitted.

W. R. Henn

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A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

CA

17

Determination of sulfanilamide. F. M. Sul'ts. (Chem. (Kharkov), Kontrol'no-*Gosudarst. Inst. Khim. Farm.*
nomye Materialy 1940, No. 1, 31-2.—Dissolve approx.
0.5 g. of sample in water with slight heating in a 250-ml.
measuring flask, cool and bring the vol. to the mark. To
25 ml. of the soln. add 3 ml. of 10% KBr soln., 2 ml. of
H_2SO_4 (d. 1.84), 2 ml. of $CHCl_3$, 4-5 drops of methyl red
and titrate slowly with 0.1 *N* KBr, shaking vigorously until
the color changes. One ml. of 0.1 *N* KBr corresponds to
0.004304 g. of sulfanilamide. The results obtained by
diazotizing, by the bromometric method with indigo car-
mine and by the bromometric method with methyl red
were, resp., 98.7, 99.5 and 99.5%. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SOL'TS, L.M.;SOL'TS, F.M.

Refractometric method of quantitative analysis of solutions with weight-volume concentrations. Aptech. delo, Moskva 2 no. 1:22-25 Jan-Feb 1953. (CLML 24:1)

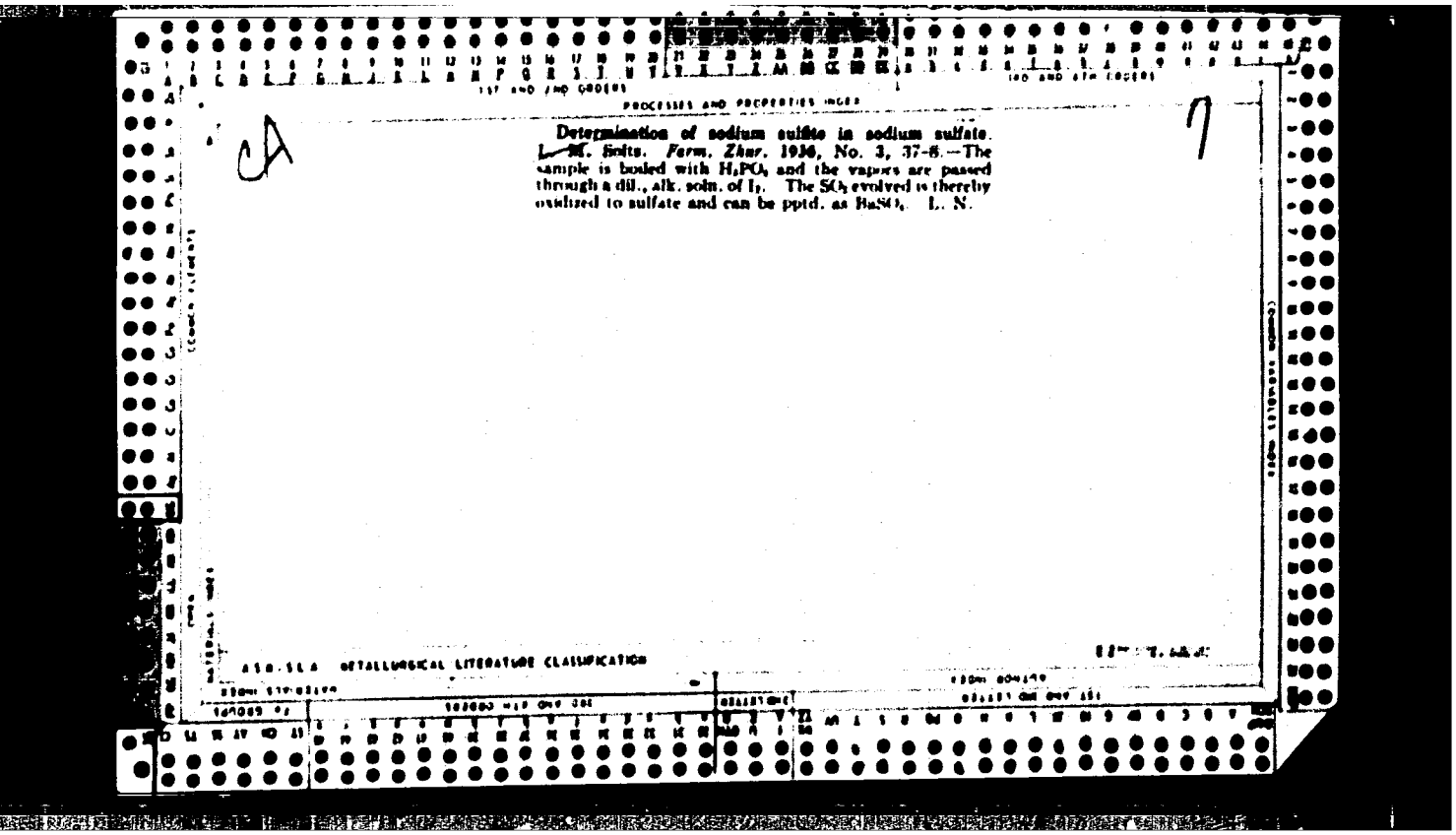
1. Of the Control and Analysis Laboratory of Khar'kov Oblast Pharmacy Administration.

SOL'TS, L. M.; SOL'TS, F. M.

Refractometric method for the quantitative determination of certain preparations and medicinal mixtures. Apt.delo 4 no.1:19-25 Ja-F '55

1. Iz kontrol'no-analiticheskoy laboratorii Khar'kovskogo oblastnogo aptekoupravleniya GAPU SSSR.

(DRUGS, determination,
refractometric method)
(CHEMICAL ANALYSIS,
refractometry of drugs & mixtures)



CA

7

Determination of sodium sulfite in sodium sulfate. L. M. Sidts. *Farm. Zhur.* 1936, No. 3, 37–8.—The sample is boiled with H_3PO_4 and the vapors are passed through a dil., alk. soln. of I_2. The SO_2 evolved is thereby oxidized to sulfate and can be ppted. as $BaSO_4$. L. S.

7

Estimation of sodium bicarbonate mixed with bismuth subnitrate. I. M. [illegible]. *Farm. Zhur.* 1930, No. 4, [illegible] — The method proposed is to change $NaHCO_3$ to Na_2CO_3 by ignition with salicylic acid, which improves the accuracy of titration and the end point. [illegible]

METALLURGICAL LITERATURE CLASSIFICATION

7

Determination of boric acid. I. M. Sel'ts. (Ukrain. Inst. Exptl. Farm. (Kharkov). *Kontrol' [illegible] Materialy* [illegible], No. 4, 117. Dissolve 0.1–0.2 g. of H_3BO_3 in 5 ml. of water, add 5 ml. of glycerol and titrate with 0.1 *N* NaOH. After the appearance of a pink color, add 3 ml. of glycerol. If the color disappears add alkali until it reappears. Repeat the addn. of 2–3 ml. portions of glycerol with subsequent titrations with alkali until the addn. of glycerol does not decolorize the soln. The method is accurate and is economical of reagents.

W. R. Henn

CA

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PROCESSES AND PROPERTIES INDEX

Determination of luminal in medicinal mixtures. L. M. Sol'ts. - *Ukrain. Gosudarst. Inst. Eksptl. Farm. (Kharkov), Konsul'tatsionnye Materialy* **1939**, No. 7, 216; cf. C. A. 35, 5256[1].—Luminal in medicinal mixts. and in tablets was detd. by dissolving in alc. and titrating with 0.1 N NaOH in the presence of phenolphthalein. Luminal in prepns. reacting with base (diuretin, $NaHCO_3$) was preliminarily extd. with ether, the ether distd., the residue dissolved in alc. and titrated with 0.1 N NaOH until a pink color was obtained. One ml. of 0.1 N NaOH corresponds to 0.0232 g. of luminal. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

A reaction for sodium. L. M. Sol'ts. *Ukrain. Gosudarst. Inst. Eksptl. Farm.* (Kharkov), *Konsul'tatsionnye Materialy* 1940, 117.—The test for Na^+ with $Zn(OAc)_2$ and $UO_2(OAc)_2$ is described. W. R. Henn

CA

17

PROCESSES AND PROPERTIES INDEX

Determination of caffeine-sodium salicylate. L. M. Sol'ts. *Ukrain. Gosudarst. Inst. Eksptl. Farm. (Kharkov), Konsul'tatsionnye Materialy* 1940, No. 2, 63.—Dissolve approx. 0.2 g. of sample in 10 ml. of water, add 15-20 ml. of ether, 1 drop of methyl orange and titrate with 0.1 N HCl with vigorous shaking until the color of the aq. layer becomes pink. One ml. of 0.1 N HCl corresponds to 0.016 g. of Na salicylate, whose content in caffeine-Na salicylate is 60%. This method can also be used for detg. *caffeine-Na benzoate*. The amt. of Na benzoate (factor 0.0153) is detd. by direct titration. The content of Na benzoate in caffeine Na benzoate is 60%. W. R. Henn

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

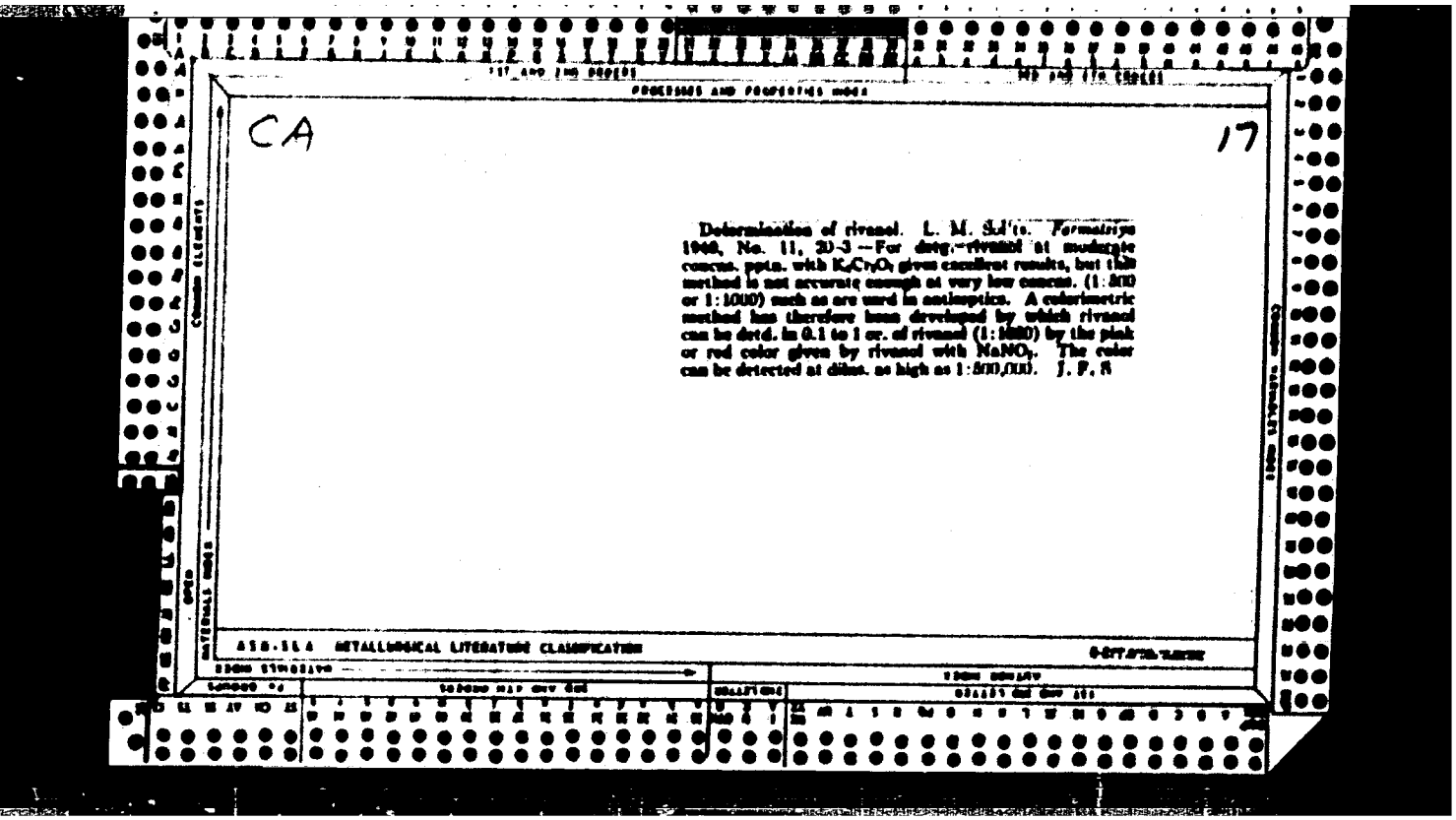
17

PROCESSES AND PROPERTIES INDEX

Determination of benzocaine. L. M. Sel'ts and E. M. Rubik. (Ukrain. Gosudarst. Inst. Eksptl. Farm. (Kharkov), *Kontrol'natsionnye Materialy* **1940**, No. 5, 102-4.—Dissolve approx. 0.04 g. of benzocaine in 25 ml. of water acidified with several drops of HCl, add 25 ml. of 0.1 N $KBrO_3$, 1 g. of KBr and 5 ml. of HCl, let stand in a dark place for 10-15 min., add 1 g. of KI and after 5 min. titrate the I with $Na_2S_2O_3$. One ml. of 0.1 N $KBrO_3$ corresponds to 0.004127 g. benzocaine. Satisfactory results were obtained. In a second method, to 0.1-0.3 g. of benzocaine add 25 ml. of 0.1 N NaOH, boil with a reflux condenser for 30 min. over a small flame, wash the condenser with 5 ml. of alc., cool, add 2-3 drops of phenolphthalein and titrate the excess base with 0.1 N HCl. One ml. of 0.1 N NaOH corresponds to 0.01651 g. of benzocaine. Make a blank test simultaneously. The method produces satisfactory results with pure benzocaine and with mixts. of benzocaine with sugar, urotropine, pyramidone, $Bi(NO_3)_3$, or petrolatum.

W. R. Henn

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

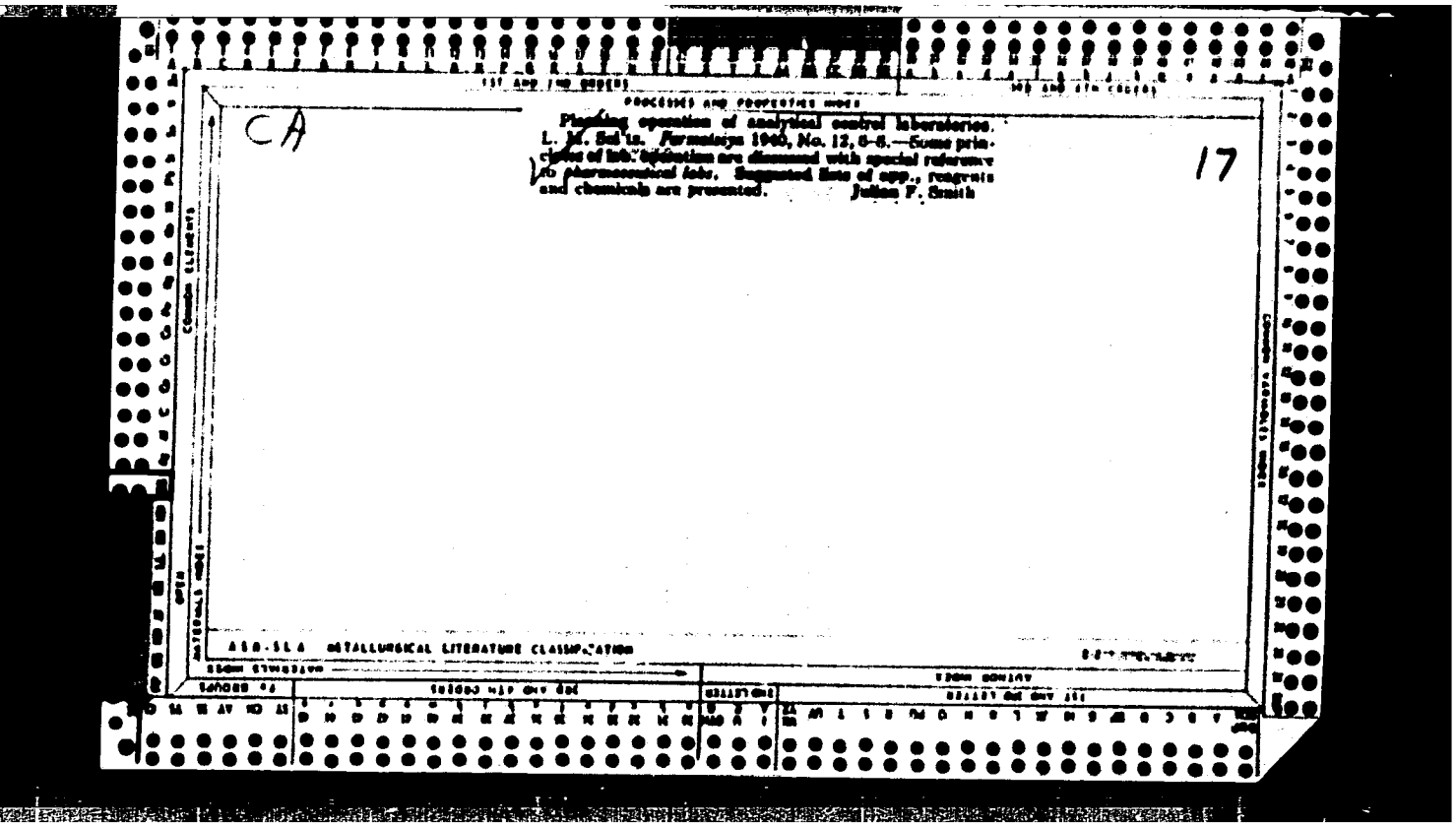


CA

17

Determination of rivanol. L. M. Sidi'ts. *Farmatsiya* 1948, No. 11, 20-3.—For detg. rivanol at moderate concns. ppts. with $K_2Cr_2O_7$ gives excellent results, but this method is not accurate enough at very low concns. (1:500 or 1:1000) such as are used in antiseptics. A colorimetric method has therefore been developed by which rivanol can be detd. in 0.1 to 1 cc. of rivanol (1:1000) by the pink or red color given by rivanol with $NaNO_2$. The color can be detected at dilns. as high as 1:500,000. J. P. S

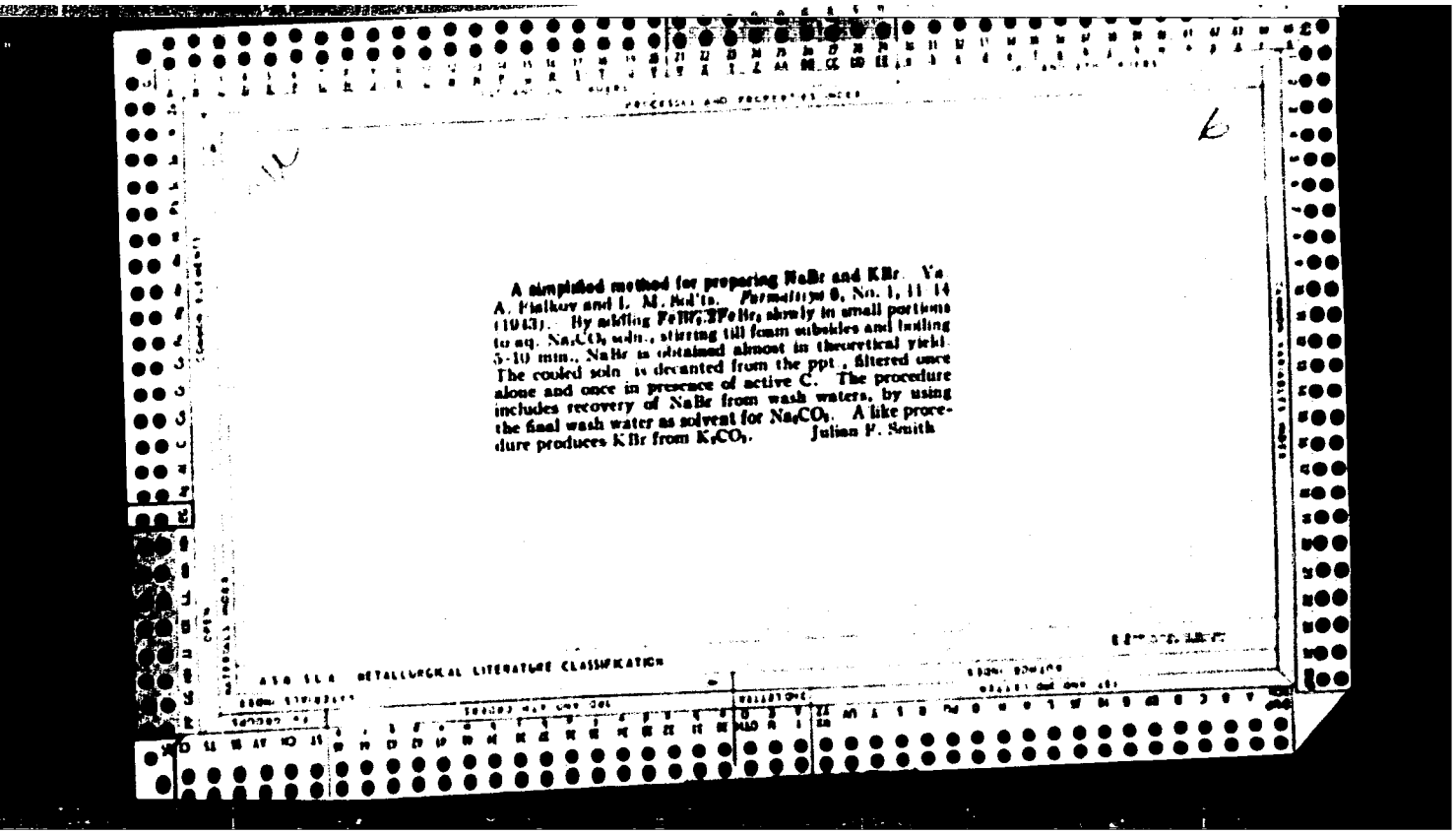
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

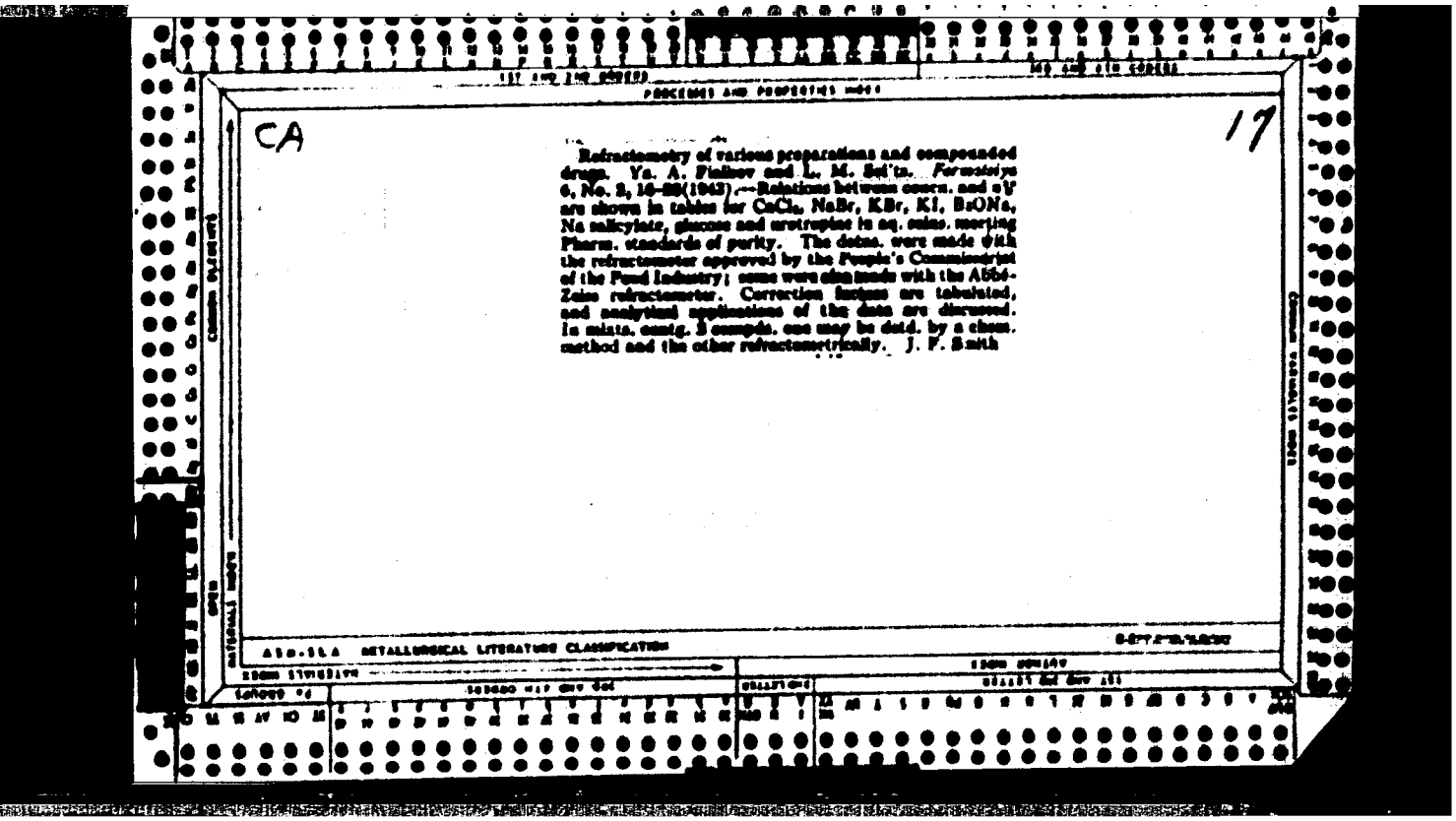
17

Planning operation of analytical control laboratories. L. M. Sollis. *Farmaciya* 1960, No. 12, 6–8.—Some principles of lab. operation are discussed with special reference to pharmaceutical labs. Suggested lists of equip., reagents and chemicals are presented. Julian F. Smith



A simplified method for preparing NaBr and KBr. Ya. A. Fialkov and I. M. Ad'ib. *Zhurnal Fiz. Khim.* 8, No. 1, 11-14 (1943). By adding $FeBr_2.3FeBr_3$ slowly in small portions to aq. Na_2CO_3 soln., stirring till foam subsides and boiling 5-10 min., NaBr is obtained almost in theoretical yield. The cooled soln. is decanted from the ppt., filtered once alone and once in presence of active C. The procedure includes recovery of NaBr from wash waters, by using the final wash water as solvent for Na_2CO_3. A like procedure produces KBr from K_2CO_3. Julian F. Smith

ASTIA METALLURGICAL LITERATURE CLASSIFICATION



CA

17

Refractometry of various preparations and compounded drugs. Ya. A. Finikov and L. M. Sel'ts. *Farmatsiya* 6, No. 2, 16-20(1943).—Relations between concn. and nD are shown in tables for CaCl2, NaBr, KBr, KI, BzONa, Na salicylate, glucose and strutropine in aq. solns. meeting Pharm. standards of purity. The detns. were made with the refractometer approved by the People's Commissariat of the Food Industry; some were also made with the Abbé-Zeiss refractometer. Correction factors are tabulated, and analytical applications of the data are discussed. In mixts. contg. 2 compds. one may be detd. by a chem. method and the other refractometrically. J. F. Smith

PROCESSES AND PROPERTIES INDEX

CA

16

A simplified method for refining raw spirit. L. M. Shil'ts. *Farmatsiya* 1944, No. 2, 33-5. Samples of raw spirit contg. 0.005, 0.01, and 0.02% aldehydes were dild. to 80, 70, 60, 40, and 20 vol.-%, then shaken with 1.5% of a solid adsorbent. Filtration followed at once, or after standing 8 hrs. Adsorption with clay, activated C, whiting, and wood ash gave no significant result with raw (80%) spirit and none after diln. to 80 or 70%. In 50% spirit (initial aldehyde content 0.02%) there was some removal of aldehydes; in 40% spirit the completeness of aldehyde removal ranged up to 60%. Activated C was most effective as a deodorant, with the added advantage of low spirit loss (3-5% as against 15-25% with clay). The preferred procedure in making 40% or 30% refined spirit for use in exts. or tinctures is to dil. raw spirit to 40%, shake 20 min. with 1.5% of activated C, let stand 8 hrs., and filter. The filtrate is nearly aldehyde-free and has practically no odor of fusel oil. Julian F. Smith

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SOL'TS, L.M.;SOL'TS, F.M.

Refractometric method of quantitative analysis of solutions with weight-volume concentrations. Aptech. delo, Moskva 2 no. 1:22-25 Jan-Feb 1953. (CLML 24:1)

1. Of the Control and Analysis Laboratory of Khar'kov Oblast Pharmacy Administration.

USSR.

Refractometric method of estimation of some preparations and medicinal mixtures. L. M. Sol'ts and F. M. Sol'ts (Main Pharm. Admin., Kharkov). *Aptechnoe Delo* 4, No. 1, 19–25(1955).—Principles underlying this method and the formulas based upon them are discussed, e.g. $X = (n - n_0)/F$, where X is the unknown concn., n index of refraction of soln., n_0 index of water, and F increase of n/1% of solute. F was detd. empirically. To simplify the procedure, the corresponding F values for a certain range of percentages (5-10) were detd. The difference between the highest and lowest F values divided by the percentage difference was considered a const. value, K for the particular compound. By calcg. the F and K values of formalin, chloral hydrate, Na norsulfazole anhyd., sugar, antipyrine aminopyrine, analgine, streptocide (white, sol.), and NaCl their percentages can be estd. in a soln. contg. a single ingredient. When 2, 3, or more compds. are present in soln., the following formula is used: $X = [(n - n_0) - [(F_1C_1) + (F_2C_2) + (F_3C_3)] \times P]/(F \times 100)$, where X is the ingredient to be detd., n index of mixt., n_0 index of water at the same temp., F_1, F_2, F_3, respective values of factor F, F factor value of the soln., and P total wt. of the mixt. or of the soln. prepd. from it. If one of the ingredients is insol. in water it does not interfere with the detn. of the water-sol. compds. The F values are detd. on the basis of percentages given in the compn. If the found values differ sharply from the given, it is proof that the prepn. has been compounded improperly, but there is no way of telling which of the ingredients is at fault.

A. S. Mirkin

MEL'NICHENKO, B.P., provizor, SOL'TS, L.M.

Evaluation of the problem of silent control in pharmacies of medical institutions. Apt.delo 4 no.3:55-58 My-Je '55. (MLRA 8:8)

1. Predsedatel' Dneprodzerzhinskogo filiala Dnepropetrovskogo otdeleniya Vsesoyuznogo nauchnogo farmatsevticheskogo obshchestva. (for Mel'nichenko) 2. Kontrol'no-analiticheskaya laboratoriya Khar'kovskogo oblastnogo aptechnogo urpavleniya GAPU USSR(for Sol'ts)

(PHARMACY,
in Russia, control)

KATUK, Grigoriy Petrovich; SOL'TS, L.O., inzhener, redaktor; UDAL'TSOV, A.N., glavnyy redaktor

[Remote signal-system radio relaying, remote control and telemetry] Retransliatsiia telesignalizatsii, teleupravleniia i teleizmereniia. Tema 26, no.I-56-87. Moskva, Akademiia nauk SSSR, 1956. 13 p. (MLRA 10:3)
(Remote control) (Telemetering)
(Radio relay systems)

USSR/Physics Oct 48
Crystals, Polar
Sparks, Electric

"New Dissertations Submitted at the Leningrad Physicotechnical Institute, Academy of Sciences USSR," T. M. Sol'ts, ½ p

"Elektrichestvo" No 10

Summarizes three dissertations: "Theory of Local Electron States in Polar Crystals," "Breakdown Strength of Gases and Coefficient

22/49T83

USSR/Physics (Contd) Oct 48

of Ionization by Electronic Shock," and "Theory of Electric Spark."

22/49T83

L 24892-65 EPA(s)-2/EWT(m)/EWP(w)/EPF(n)-2/EWA(d)/T/EWP(t)/EPA(bb)-2/EWP(b)
Pad/Pt-10/Pu-4 IJP(c) MJW/JD/HW/JG/MLK

ACCESSION NR: AT5002781 S/0000/64/000/000/0200/0203

54
Br I

AUTHOR: Sol'ts, V. A.; Bedretdinova, M. A.

TITLE: Use of rhenium in alloys of high hardness and strength

SOURCE: Vsesoyuznoye soveshchaniye po probleme reniya. 2d, Moscow, 1962. Reniy (Rhenium); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1964, 200-203

TOPIC TAGS: rhenium, rhenium addition, cobalt containing alloy, iron containing alloy, chromium containing alloy, nickel containing alloy, aluminum containing alloy, rhenium containing alloy, molybdenum containing alloy, alloy property, 36NKhTYu alloy, 36NKhTYuM5 alloy, 36NKhTYuM Re alloy, 40KNKhM alloy

ABSTRACT: The effect of alloying with rhenium was investigated on three spring alloys: 40KNKhM (0.11% C, 16.17% Ni, 21.21% Cr, 40.18% Co, 7.01% Mo), 36NKhTYu (0.05% C, 35.58% Ni, 2.88 Ti, 13.33% Cr, 0.85% Al), and the 36NKhTYuM5 (same as preceding plus 4.94% Mo). Experiments showed that additional alloying with 7—10% rhenium greatly improves mechanical properties. Cold-drawn 40KNKhM wire made from alloy containing 7—10% rhenium and annealed at 550C had a hardness of 60—64 R_c and a tensile strength of 260—280 kg/mm^2. Alloying with 7% rhenium raised the softening temperature of 36NKhTYuM5 alloy from 350—400C to over 600C. Rhenium-containing alloys also have a higher relaxation strength. Orig. art. has: 6 figures. [ND]

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L 24892-65

ACCESSION NR: AT5002781

ASSOCIATION: none

SUBMITTED: 05Aug64 ENCL: 00 SUB CODE: MM

NO REF SOV: 003 OTHER: 000 ATD PRESS: 3184

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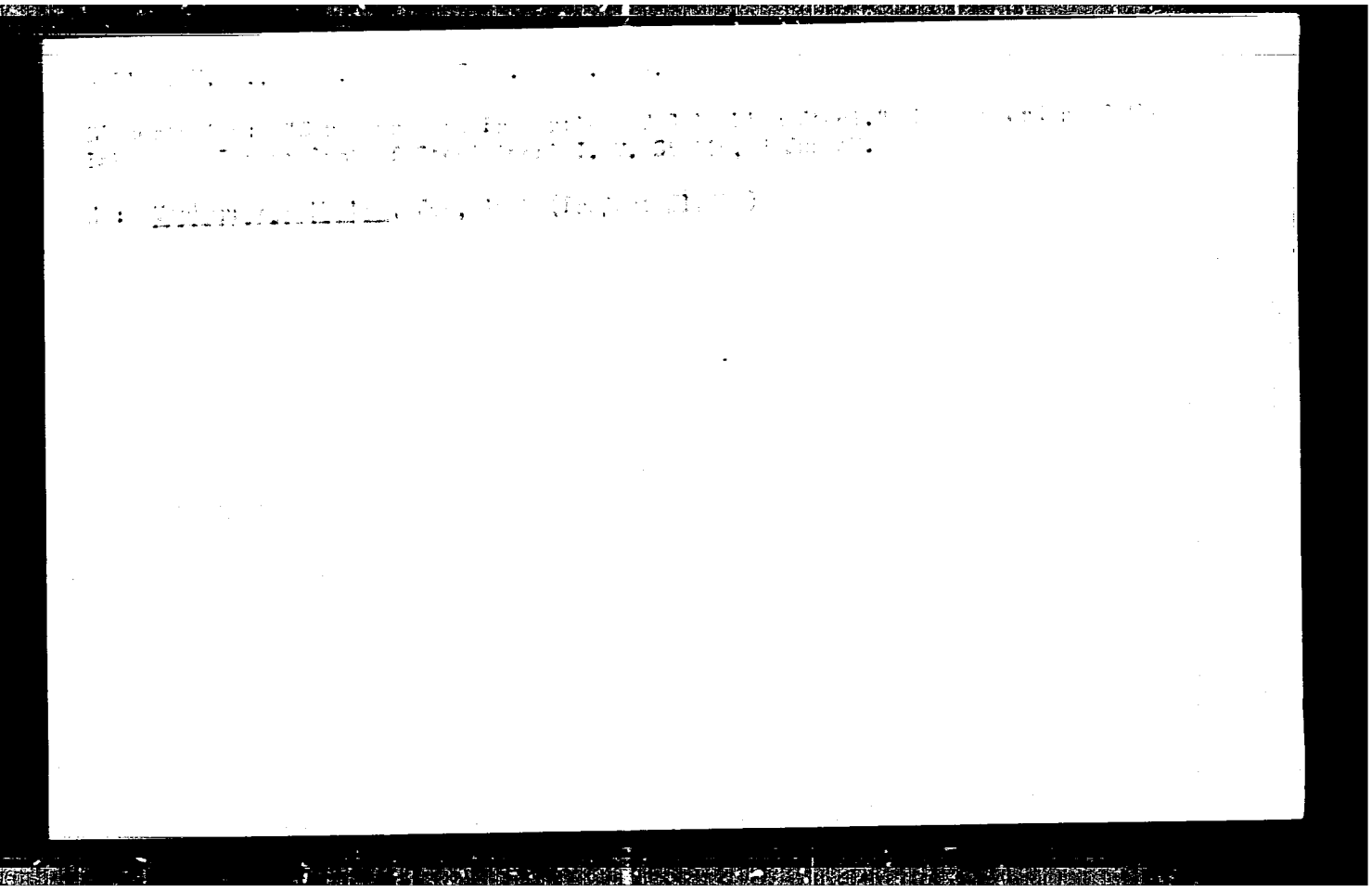

SOV/137-59-1-1376

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 183 (USSR)

AUTHORS: Solov'yeva, N. A., Sol'ts, V. A.

TITLE: A New Nonmagnetic Corrosion-resistant Alloy (Novyy nemagnitnyy korrozionnoustoychivyy splav)

PERIODICAL: Sb. tr. Tsentr. n-i. in-t chernoy metallurgii, 1956 Nr 15 pp 289-303

ABSTRACT: A precipitation-hardening alloy (A) 36NKhTYu (30-40% Ni 10-20% Cr, Ti, Al) was studied, and the range of variations in mechanical properties occurring during tempering of quenched alloys was determined. Increasing the content of Ti and Al favors the process of precipitation hardening and increases the strength of the A upon tempering. Increasing the content of Ni from 34 to 40% does not affect the properties of an A; an increase in the concentration of Cr to 20% retards the processes which take place during hardening and lowers the strength of the A during tempering. The compound $(Ni, Fe)_3Ti$ constitutes the hard phase. The E of the A diminishes during deformation, but increases upon process of tempering.

Card 1/1 P. N

Solts, V.A.

AUTHORS: Boricova, A.K., Solts, V.A. 32-1-30/55

TITLE: The Measuring of Young's Modulus on Thin Samples Made From Elastic Alloys (Izmereniye modulya uprugosti pruzhinnykh splavov na tonkikh obraztsakh).

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 1, pp. 70-74 (USSR)

ABSTRACT: In this paper measuring methods are described, among them that developed by T.A. Gevondyan Ref. 1,2 with application of a tensometer, and the dynamical method with application of the apparatus of the construction of the TsNIITMASh, which is based upon the principle of resonance oscillations (fig. 1). In the former case samples of the thickness of up to 0.3 mm, and in the latter case samples having a thickness of 1 mm are used. In this connection it is said that for some of the latest elastic alloys no data concerning Young's moduli have as yet been worked out in the USSR, as e.g. for the alloys: N36KhTYu and N35KhMV, which are dealt with here. In the chapter: Research Methods, first of all the method of determining Young's modulus in the case of "pure bending" with application of the apparatus developed by Gevondyan is dealt with with respect to the aforementioned samples and the results obtained are

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shown graphically as well as in a table. Following this, the determination of Young's modulus by the (dynamical) resonance frequency method by application of the second testing device mentioned above is described. In this case Young's moduli for round and for flat samples are determined, which are here shown together in 2 tables. A further table shows a comparison of results obtained by both methods, and in conclusion the following statements are made: 1.) For the determination of Young's modulus of foil- and band-like materials having a thickness of 1 mm the second method and apparatus are to be recommended. (For samples of greater thickness test conditions must be adapted accordingly). For bands of a thickness of 0.1-0.3 mm the first-mentioned method and apparatus developed by Gevondyan is to be preferred. In this case graphical treatment of results is necessary. 2.) Young's modulus for the alloys N36KhTYu and N35KhMV in the case of samples having a thickness of 0.3 and 1.0 mm depends upon the degree of deformation and the manner of thermal treatment: With a higher degree of deformation Young's modulus decreases, and it rises in the case of more dense hardened and softened samples. There are 1 figure.

The Measuring of Young's Modulus on Thin Samples Made From Elastic Alloys 32-1-30/55

4 tables, and 4 references, 3 of which are Slavic.

ASSOCIATION: Central Scientific Research Institute for Ferrous Metallurgy (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii).

AVAILABLE: Library of Congress

Card 3/3 1. Elastomers-Test methods 2. Elastomers-Test results

BOLEUKH, A.S.; BELOVA, E.P.; SOL'TS, V.A.

Use of the K40MKhM alloy for watch springs. Sbor.trud.TSNIICHM no.22:57-70 '59. (MIRA 13:6)
(Springs(Mechanism)) (Cobalt-nickel-chromium alloys)

S/137/61/000/008/024/037
A060/A101

AUTHORS: Borodkina, M. M., Golovanenko, S. A., Sol'ts, V. A.

TITLE: Structural transformations in the alloy K40HXM (K40NKhM) in the region of temperatures of hot deformation

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 8, 1961, 21, abstract 8Zh146 ("Sb. tr. Tsentr. n.-i. in-t chernoy metallurgii", 1959, no. 22, 71-80)

TEXT: A determination was carried out of the mechanical properties at room temperature after various heat-treatments, of the mechanical characteristics at high temperatures, and of the electrical resistivity. Microstructure, X-ray crystallographic and phase analyses were carried out. It was established that the alloy K40NKhM undergoes structural transformations at temperatures $< 1,050^{\circ}C$, connected with decomposition of the solid solution and the separation of a carbide of the type $(Cr, Fe, Mo)_{23}C_6$. The decomposition proceeds most intensely under deformation in the range $1,050 - 900^{\circ}C$, which may lead to the formation of cracks under hot deformation. Therefore the temperature of the end of the hot deformation of that alloy should be $\geq 950^{\circ}C$.
[Abstracter's note: Complete translation] L. Vul'f

Card 1/1

S/137/61/000/008/032/037
A060/A101

AUTHORS: Sol'ts, V. A., Nosan', L. T.

TITLE: Effect of molybdenum upon the properties of the alloy Н36 ХТЮ (ЭИ702) [N36KhTYu (EI702)]

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 8, 1961, 16, abstract 81130 ("Sb. tr. Tsentr. n.-i. in-t chernoy metallurgii", 1959, no. 22, 91-103)

TEXT: The effect of Mo in the amount up to 8% upon the mechanical and physical characteristics of the alloy N36KhTYu (EI702) was investigated. When Mo is introduced into the alloy the strength and hardness after strengthening heat-treatment are increased. The maximum strengthening is attained at tempering at 750°C. Mo raises the σ_s/σ_b ratio. The addition of Mo to the alloy increases its heat resistance under short exposures at 20 - 500°C. The best characteristics are possessed by alloys with 5 and 8% Mo after the heat-treatment: hardening at 975 and tempering at 750°C. To obtain the optimum heat resistance and level of

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Effect of molybdenum upon the properties ...

mechanical characteristics it is expedient to raise the heating temperature for hardening up to > 1,000°C.

T. Rumyantseva

[Abstracter's note: Complete translation]

Card 2/2

AL'TGAUZEN, O.N.; LYUBETSKAYA, O.V.; SOL'TS, V.A.

Determining the magnetic susceptibility of fine wire made of weakly magnetic materials. Sbor.trud.TSNIICHM no.22:160-167 '59. (MIRA 13:6)

(Wire--Magnetic properties)

BOHODKINA, M.M.; MAKHUKOV, N.G.; SOL'TS, V.A.

Hardening of the K40MKhM alloy for springs. Sbor.trud.TSNIICHM no.22:81-90 '59. (MIRA 13:6)
(Cobalt-nickel-chromium alloys—Hardening)

S/133/60/000/005/003/003

AUTHORS: Rakhshtadt, A. G., Candidate of Technical Sciences, Docent,
Sol'ts, V. A., Candidate of Technical Sciences,
Moiseyev, V. F., Engineer

TITLE: Heat Treatment of Spring Alloys Used at High Temperatures

PERIODICAL: Stal', 1960, No. 5, pp. 468-472

TEXT: Tests were carried out on the elastic properties of three types of spring steels during heating under various conditions. First two austenitic spring steels were tested with the following composition: an ЭИ 702 (EI702) type alloy: Н36ХТЮ (N36KhTYu): Cr 12.0%; Ni 35.2%; Ti 2.98%; Al 0.68%, marked ПА (PA); and an ЭИ 702 (EI702) type alloy: Н36ХТЮМ; (N36KhTYuM5): C 0.035%; Si 0.39%; Mn 1.15%; Ni 35.9%; Cr 13.08%; Ti 2.79%; Al 1.23% and Mo 4.70%, marked ПБ (PB). The ingots tested were forged, cold- and hot-rolled, with intermediate hardening at 1,000°-1,100°C. The samples were pressed from cold-rolled strips 0.3 mm thick. The heat treatment for the PA alloy differed from the conventional inasmuch as after hardening (started at 950°C) in water tempering took place during 8 hours instead of 2-3 hours at 750°C, in order to stabilize the structure more effectively

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Heat Treatment of Spring Alloys Used at High Temperatures

and to obtain a higher heat-resistance, although this could only be done at the expense of the elasticity limit at normal temperature. After establishing and comparing the limits and the moduli of elasticity, as well as the electrical resistance of both alloys subjected to the same condition of heat treatment, it was found that by adding molybdenum to the EI702 N36KhTYu alloy the bond strength in the lattice of the solid solution was increased resulting in a higher strength and hardness of the alloy both after hardening and tempering, while the kinetics of hardening were not changed essentially. The moduli of elasticity for both types (PA and PB) changed in linear relation with the test temperature and this conformity promoted the thermal compensation of the changes in the elasticity modulus and is a valuable property of spring steels used in instruments. Tests at various holding times (25 sec and 1 hour) and different temperatures established that the PA steel was not sufficiently heat-resistant and when improving its heat-resistance by hardening at 1,100°-1,150°C its elastic properties were lowered. On the other hand, the PB steel kept its high elastic properties even at 300°C on account of the strengthening of the boundary zones of the crystal grains in connection with the reduced extent of the decomposition of the solid solution and the general increase in the

Heat Treatment of Spring Alloys Used at High Temperatures

bonding strength in the crystal lattice under the influence of molybdenum, (according to the data of Shteynberg, M. M.). The third steel type H30X12T4OBB (N80Kh12TYuVB), marked ПВ (PV) had the following composition: C 0.095%; Si 0.85%; Mn 0.89%; Ni 79.05%; Cr 11.18%; Ti 2.63%; Al 0.91%; Nb 1.38%; Mo 3.47%. After testing the strengthening under various heat conditions, the elastic properties of the alloy were investigated with hardening at 1,050°C-1,100°C and tempering at 650°C, 700°C and 750°C, for 5 and 10 hours. The slightest changes in the modulus of normal elasticity were found in samples hardened from 1,050°-1,100°C after tempering at 750°C. A higher tempering temperature causes a corresponding increase in the structural stability and the bonding strength. This was proved by the changes in the temperature coefficient of the elasticity modulus. The optimum heat regime for the PV steel involves a hardening temperature of 1,100°C in water for 10 hours and tempering temperature of 750°C, while the maximum value for the elasticity limit was obtained by heating after this treatment to 500°C. The results obtained under this heat treatment were better than those obtained by Crawford (Ref. 9) at the following conditions: hardening temperature 1,150°C, first tempering at 850°C for 24 hours, second tempering at 700°C for 20 hours. There are 7 figures and 9 references: 8 Soviet and 1 English.

Card 3/3

S/129/62/000/006/002/008
E193/E483

AUTHORS: Savitskiy, Ye.M., Doctor of Chemical Sciences, Professor, Sol'ts, V.A., Engineer, Tylkina, M.A., Candidate of Technical Sciences

TITLE: The effect of rhenium on the properties of a cobalt-chromium-nickel alloy

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no.6, 1962, 10-13 + 1 plate

TEXT: The Co-Cr-Ni alloy К40НХМ (K40NKhM) is used as a material for those parts of electrical measuring instruments which must be anti-magnetic and have high hardness and good corrosion and wear resistance. In some cases, hardness higher than that obtained by mechanical and thermal treatment is required and the object of the present investigation was to explore the possibility of achieving this end by alloying with rhenium. The experimental materials were prepared by remelting rods of the K40NKhN alloy with 0.5 to 15% rhenium introduced in the form of sintered powder briquettes. The ingots, 10 to 12 mm diameter, were reduced by

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The effect of rhenium ...

hot swaging at 1150 - 1180°C to 4.5 - 5.5 mm diameter, and then drawn to 0.5 mm diameter wire in several operations with intermediate annealings, the reduction given in the final operation varying between 50 and 80%. Metallographic examination revealed that the alloy studied could contain up to 10% rhenium in solid solution. All cast alloys had a similar dendritic structure; after hot swaging the rhenium-free specimens consisted of large polyhedral grains with disperse inclusions of a second phase particle. Addition of rhenium brought about considerable grain refinement and formation of twins in swaged specimens, the latter effect being particularly pronounced in alloys with 7 to 10% rhenium. All specimens were solution treated at 1180°C and then aged at various temperatures, hardness measurements being taken on each specimen in various stages of the mechanical and thermal treatment. Typical results are reproduced in Fig.2, 3 and 6. In Fig.2, Rockwell hardness (HRB and HRC) is plotted against the rhenium content in the alloys, graphs a, b and b relating to cast, hot-swaged and solution treated material, respectively. In Fig.3, hardness (Rockwell HRC and Vickers HV)

The effect of rhenium ...

of wire specimens, given 80% cold deformation, solution treated and then aged, is plotted against the ageing temperature; various curves relating to specimens with no rhenium (curve 1) and to specimens containing 0.5, 0.8, 3.0, 5.0, 7.0 and 10.0% rhenium (curves 2, 3, 6, 7, 8 and 9 respectively). Finally, hardness (HRC and HV) of aged specimens containing 7% rhenium is plotted against the ageing temperature, various curves relating to wires which in the last drawing operation had been given different reductions, as indicated by each curve. Several conclusions were reached. 1. Addition of rhenium increases the strength of the K40NKhM alloy without reducing its workability or affecting its anti-magnetic and corrosion-resistance properties. 2. Hardness of 60 to 64 HRC and UTS of 260 to 280 kg/mm^2 can be attained in an aged alloy containing 7 to 10% rhenium. There are 6 figures.

ASSOCIATION: TsNIIChM
Institut metallurgii im. A.A.Baykova (Institute of Metallurgy imeni A.A.Baykov)

S/776/62/000/025/021/025

AUTHORS: Borisova, A.K., Nosan', L.T., Sol'ts, V.A., Timofeyeva, Z.A.

TITLE: Alloys for tension members in electrical measuring instruments.

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov. no. 25. Moscow, 1962. Pretsizionnyye splavy. pp. 311-325.

TEXT: The paper describes an experimental investigation of alloys for tension members for electrical measuring instruments which must exhibit an elevated strength, small elastic aftereffect, nonmagnetic behavior, low electrical resistance (ER), and elevated corrosion resistance (CR). The direct objective of the investigation was the study of the possibility of applying new Co- and Cr-Ni-based spring alloys for such tension members. In attempting the selection of suitable alloys, it is found that dispersion-hardening spring steels, which have elevated elastic properties as a result of work hardening and anneal, should also simultaneously exhibit the smallest elastic aftereffects. Such alloys were developed by the Institute for Precision Alloys at the TsNIIChM (Central Scientific Research Institute of Ferrous Metallurgy); the investigation of the properties of these alloys with respect to use in tension members was performed at the Institute, jointly with the Engineering

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Alloys for tension members in electrical S/766/62/000/025/023/025

Department of the "Vibrator" plant. The chemical composition, the mechanical properties, the ER, and thermal expansion coefficient are listed in detail for both the Co-based and the Fe-Cr-based alloys. All alloys were smelted in the high-frequency induction furnace according to TsNIIChM procedures. They were then forged into a round billet, 42-43-mm diam, after preheating to 1,180-1,200°C, with a billet T after forging of no less than 1,000°. The forged billets were etched to eliminate any surface defects and were rolled to an 8-mm diam. Cold-drawn wire of 0.2-0.1-mm diam was made with intermediate heat treatments in the open furnace, as follows: Heating to 1,000-1,180°C, 15-20-min soaking (depending on the wire diam), water cooling. Heat treatment was performed in the furnace under a shielding atmosphere. Of all the alloys investigated the most suitable materials for tension members are the alloys K40HXMB (K40NKhMV) and H36X8MTYu (N36Kh8MTYu). Compositions are shown in the body of the paper. The tensile strength of tension members made of these materials approaches 250-300 kg/mm^2, with a 0.02-0.05% elastic aftereffect of 10-mm long tension member as measured by the angle of twist. The magnetism of these alloys is practically negligible. Their CR is elevated. The tension members can be soldered with ordinary tin-based soldering compounds. The 2 alloys are suitable for the finest type of wire drawing and rolling. The K alloy has better mechanical and elastic properties, whereas the N alloy is more easily handled in manufacture, since it is more ductile in wire drawing and rolling and

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undergoes less embrittlement during work hardening. Both alloys have served well in tension members used in highly-sensitive laboratory instruments. There are 13 figures, 5 tables, and 8 references (7 Russian-language Soviet and 1 English-language: M. Fangeman, Instr. & Automation, v.27, no.5, 1954, 98).

ACCESSION NR: AT4043508 S/3107/64/000/003/0067/0077

AUTHOR: Rakhshtadt, A. G. (Candidate of technical sciences, Docent); Sol'ts, V. A. (Candidate of technical sciences); Nosan', L. T. (Engineer)

TITLE: A study of the high temperature properties of steels EP51 and EP52

SOURCE: Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promy*shlennosti. Sektsiya metallovedeniya i termicheskoy obrabotki. Metallovedeniye i termicheskaya obrabotka, no. 3, 1964, 67-77

TOPIC TAGS: steel EI702, steel EP51, steel EI52, austenitic steel, chromium nickel steel, steel high temperature property, optimal deformation range, tempered austenitic steel, spring service temperature range, molybdenum steel, steel spring

ABSTRACT: To determine the optimal thermal environment for deformation, forged rods and strip samples of EP51 and EP52 (Modified steel EI702, 5 or 8% Mo added to reduce Fe) was tested (diameter = 10mm, load rate 1.1mm/min.) for tensile strength, relative elongation and transverse contraction at temperatures up to 500C and for the same characteristics plus yield point and hot hardness at 900-1200C. Also, hot twist (24-500 rpm) and bending impact tests were carried out to determine the hot deformation range.

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ACCESSION NR: AT4043508

The formulas $\gamma = \frac{\pi dn}{l}$ (d = sample diameter, n = revolutions, l = calculated sample length) and $\tau = \frac{12M}{\pi d^2}$ (M=torque) were employed to determine the relative shear and max. shear stress, respectively. Performance characteristics of springs were evaluated by testing for the plastic limit at room and high temperatures (0-600C, cyclic buckling), resonance variation of modulus of elasticity and relaxational stability. The addition of Mo markedly affected plasticity and strength at 900-1200C. EP51 and EP52 showed lower plasticity and better deformation resistance than EI702, their hot deformation range was narrower (950-1100C compared to 900-1180C). Hardness, yield point and tensile strength at 20-500C were higher in EP51 and EP52, the latter remaining nearly constant over the range for EP52. The temperature dependence of the normal elasticity modulus was nearly identical for all three steels; the dependence of the plastic limit was identical for EP51 and EI702 for a 25 sec. load, but substantial deterioration in that limit was noted at 300 and 200C, respectively. Stress relaxation decreased as Mo increased (400C, 200 hrs., 20.8% for EI702, 6.2% for EP51, 4.6% for EP52). Peak relaxational stability was obtained by

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ACCESSION NR: AT4043508

quenching from 950-1000C and tempering at 700C for EI702, 1050-1100C and 750C (2 hrs.) or 700C (8 hrs.) for EP51, 1150C and 750C (2 hrs.) for EP 52. EI702 should be quenched for 920C, EP51 from 980C and EP52 from 1000-1050C (tempering unchanged) when a higher plastic limit is also required. Max. service temperature was 200C for EI702 springs, 300C for EP51 and 400C for EP52. It is concluded that Mo significantly increases the high temperature strength of type 13-36 austenitic steel and does not produce major changes in the cohesive energy of the crystalline lattice in such steels. Orig. art. has: 8 graphs, 1 table, 2 formulas and 5 photomicrographs.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: MM NO REF SOV: 006 OTHER: 000

Card 3/3

L 34063-65 (A c)/EWT(m)/T/EWP(b)/EWA(d)/EWP(w)/EWP(t) Pad IJP(c) MJW/JD/HM

ACCESSION NR: AP5005095 S/0129/65/000/002/0002/0006

AUTHOR: Smirnova, A. V.; Sol'ts, V. A.

TITLE: Structural transformations in 36NKhTYu type alloys with molybdenum

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 2, 1965, 2-6, and insert A and B between p. 24 and 25, and insert facing p. 40

TOPIC TAGS: microdiffraction analysis, molybdenum alloy, xray diffraction analysis, xray spectral analysis, alloy structure, alloy mechanical property, alloy heat treatment / 36NKhTYu alloy

ABSTRACT: Results are presented of a study of the mechanical and elastic properties and microstructure of 36NKhTYu type alloys additionally alloyed with molybdenum, in relation to heat treatment. The chemical composition of the alloys is given in tabular form. Heat treatment of the specimens consisted of quenching from 950-1200C and tempering at 600-850C for 4 hrs. and longer. The structure was investigated by electron-microscopy with microdiffraction, x-ray diffraction, x-ray spectral and phase analyses and by colored film etching. An analysis of the data on mechanical properties demonstrated that the addition of Mo to the 36NKhTYu alloy increased the strength and elasticity of the alloy after quenching and tem-

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L 34063-65

ACCESSION NR: AP5005095 6

pering (aging). Greatest hardening occurred at temperatures higher than those for the alloy alone. The Mo-containing alloys also had a greater relaxation resistance. It was also found that: in the 36NKhTYu alloys containing Mo, decomposition of the solid solution upon tempering (aging), with separation of the main hardening γ'-phase, occurs uniformly, unlike the situation in the alloy alone in which separation of the phase begins along the grain boundaries; alloying of the alloy with 5 and 8% Mo hardens the γ-solid solution as a result of the solution of about 4% Mo in it, increases the resistance of the main strengthening phase of the composition $(Ni, Fe)_3 (Ti, Al, Mo)$ to coagulation and its transformation to the hexagonal phase Ni_3Ti, and effects the formation of a second hardening phase of the type Fe_2Mo. The presence of Mo in the alloys after optimal heat treatment conditions (quenching and tempering) of the hardened solid solution and the two hardening phases (γ'-phase and Fe_2Mo type phase) gave high strength and elastic properties to the specimens. Orig. art. has: 4 tables and 4 figures.

ASSOCIATION: TsNIICherMET

SUBMITTED: 00 ENCL: 00 SUB CODE: MM,OP

NO REF SOV: 007 OTHER: 000

Card 2/2

R/004/60/000/009/001/001
D244/D306

AUTHORS: Marcus, Bruno; Ciontea, Ion; Kovacs, Iuliu; Visoiu, Violeta; Diaconu, Lucia; and Soltuz, Constantin, Engineers (Bucharest)

TITLE: Ceramic capacitors for radio engineering

PERIODICAL: Electrotehnica, no. 9, 1960, 321 - 327

TEXT: The article presents some studies conducted by ICET on producing dielectric ceramic materials from domestic raw materials for P 100 and N 750 capacitors. The material for the P 100 capacitors was developed by ICET on the basis of steatite from the Hunedoara region. For the N 750 capacitors, the ICET developed a material consisting of titanium dioxide, zinc oxide and zirconium oxide. The main componenes of this material called "Ti 11", (N 750) are TiO_2, ZnO, with additions of ZrO_2, Al_2O_3, and SiO_2. The main properties vary as follows: $tg\delta$; with an increase of TiO_2 the losses drop to $tg\delta = 4 \cdot 10^{-4}$; with an increase of TiO_2 the constant increases to above 80, in case

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R/00[illegible]/60/000/009/001/001
D2[illegible]/D306

Ceramic capacitors for...

of a TiO_2 content of over [illegible]%. TKE: varies from +150 to [illegible]°C, in a zone of 1[illegible] to 9[illegible]% of TiO_2. At temperatures above [illegible],000°C the crystalline phases are TiO_2 and $ZnO \cdot TiO_2$. Reducing the temperature to 8000C, the latter enters into a solid solution with TiO_2. The titanium dioxide was of foreign origin. The determination of dielectric losses carried out with 50 capacitors in dry and humid states is given in Fig. 9. 1. number of capacitors 2. tangent of the loss angle 3. in dry state $tg\delta_{med}$ 2.53 x 10^{-4} 4. after moistening $tg\delta_{med}$ 3.6 x 10^{-4}. The loss values are included in a narrow range, the "Gauss bell" having a pointed shape. After having moistened the capacitors for 24 hrs in distilled water the losses slightly increased, the shape of the curve, however, remaining the same. The loss values were maintained within the limits admitted by international standards. The distribution of the values of the dielectric losses was measured with a group of 400 capacitors, again resulting in a pointed curve. It is concluded that the manufacturing of ceramic capacitors from domestic raw materials

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D244/D306

Ceramic capacitors for...

is in accordance with the need for a rapid development of Rumanian industry. The results obtained correspond to those of foreign products, proving the possibility of manufacturing these capacitors in Rumania. There are 10 figures, 4 tables and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: M.E. Lovin: Phase diagrams for ceramics, Ohio, 1956.

ASSOCIATION: ICET

SUBMITTED: April 8, 1960

Card 3/4

BENETATO, Gr.; BACIU, I.; SECAREANU, St.; COJOCARU, A.; MOCODEAN, Justina; VITEBSCHI, Varvara; SOLTUZ, V.

On the phagocyte-stimulating action of different globulin fractions of the blood serum, isolated by the chromatographic method. Rev. sci. med. 7 no.1/2:7-12 '62.

1. Membre de L'academie dela R.P.R. (for Benetato).
(SERUM GLOBULIN) (PHAGOCYTOSIS) (BARIUM SULFATE)

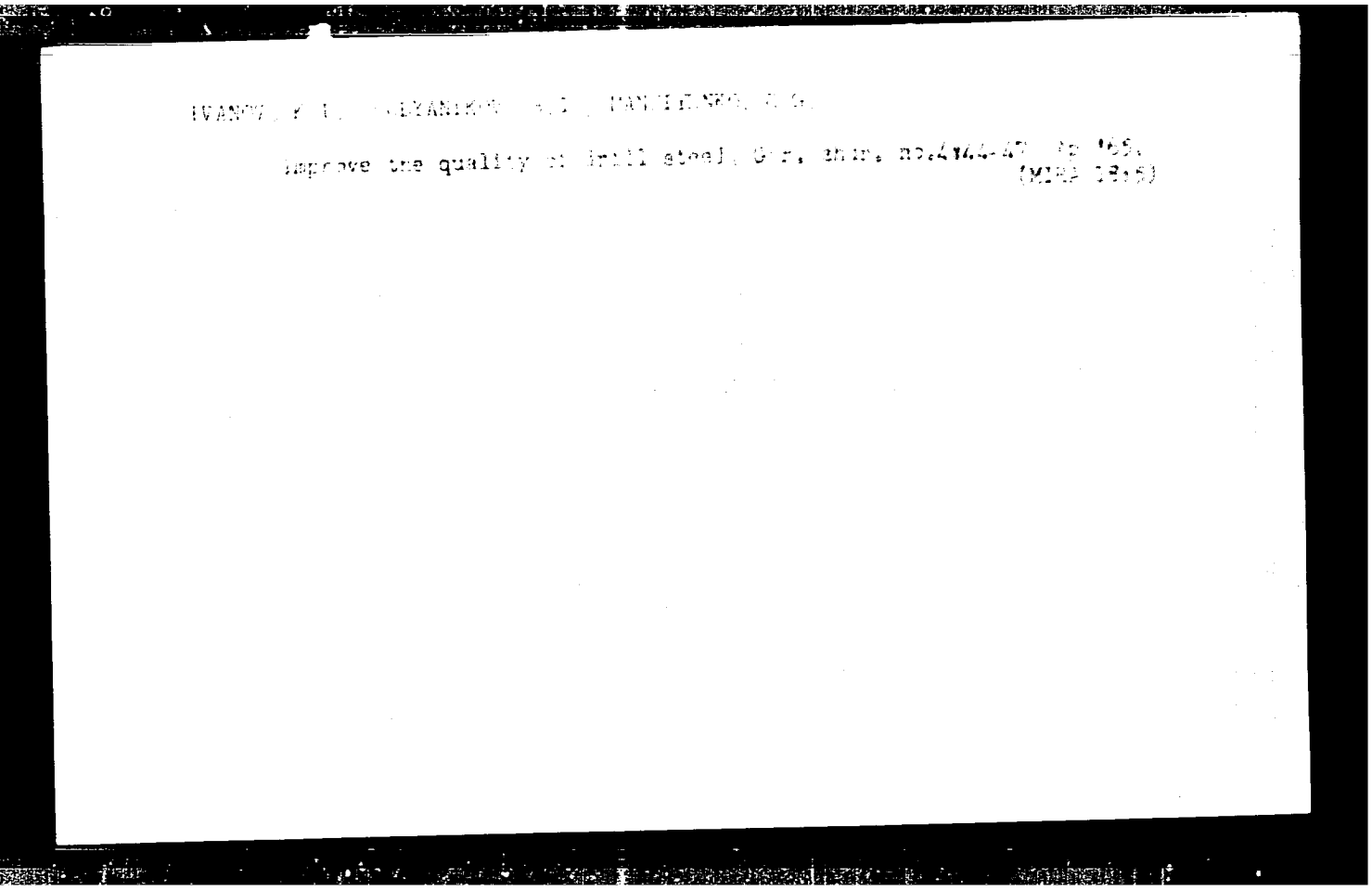
BACHU, I. [Baciu, I.]; IOROFTEY, M. [Doroftei, M.]; TOMUSH, L. [Tomus, L.]; SHOLTUZ, V. [Soltuz, V.]; DEREVENKO, P.

Effect of hypoxia on the electrical activity of the cerebral cortex and on the excitability of chemoreceptors of the carotid sinus under various conditions of oxygen diffusion. Fiziol. zhur. 50 no.3:259-267 Mr '64. (MIRA 18:1)

1. Institut meditsinskikh issledovaniy Kluzhskogo filiala AN Rumynskoy Narodnoy Respubliki i Kafedra fiziologii Mediko-farmatsevticheskogo instituta, Kluzh.

BACIU, I.; DEREVENCO, P.; SOLTUZ, V.; CRISAN, T.; CATANICI, V.

Use of the EEG test of resistance to hypoxia in exploration of physical exertional capacity. Stud. cercet. de fiziol. 10 no.2: 117-131 '65.



Improve the quality of krill steel. Gor. zhur. no.4:44-47 Ap '65.
(MIRA 18:5)

SOLTYBAYEV, K.S., kandidat sel'skokhozyaystvennykh nauk.

Hormonal stimulation of multiparity in the breeding of fine-wooled sheep. Izv. AN Kazakh. SSR. Ser. biol. no.35: '47 (MLRA 9:5)

(SHEEP BREEDING) (HORMONES, SEX)

SOLTYK, E. Yu

5833. **Experiment in preparation of dry antirabic vaccine.** E. Iu. Soltyk *Trud. Omsk. Inst. Mikrobiol.*, 1955, No. 3, 189–194; *Referat. Zh. Biol.*, 1958, Abstr. No. 84637.—Brain suspension containing virus fixe of ratses with addition of sucrose-gelatin medium and preservative (0·2% phenol) was dried out under vacuum from the frozen state at temp. from −18° to −20°. After 9 months' storage the preparation possessed good solubility in physiological soln. and retained its virulence and immunogenicity. (Russian)

C. G. Bernard

SOLTYK, T.

Some production aspects in aircraft design. p.7. (TECHNIKA LOTNICZA, Warszawa, Vol. 9, No. 1, Jan./Feb. 1954)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 6, June 1955, Uncl.

P/008/61/000/001-2/001/006
A107/A126

AUTHOR: Sołtyk, Vitold, Engineer

TITLE: Rocket weapons or aircraft. Part 1

PERIODICAL: Technika lotnicza, no. 1-2, 1961, 2 - 5

TEXT: The author describes the task of the Air Force in development of rockets and aircraft. Tactical rocket weapons, i.e., long-range ballistic or self-propelled rockets with speeds of 15,000 - 20,000 km/h or 700 - 900 km/h, respectively, furnished with atomic or conventional warheads replace more and more bombers. The author stresses the advantages of rocket weapons, i.e., their surprise effect, velocity and altitude and their disadvantages, i.e., big size, high costs, etc., as compared to bombers. The author's conclusion is that strategic bombers are more efficient owing to their mobility, precise aiming and low costs of bombs or missiles. There are 7 photographs.

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Soltyk V.Ya.

109-12-6/15

AUTHORS: Zingerman, Ya.P. and Soltyk, V.Ya.

TITLE: Chemical Action of Oxygen on the Electron Emission of Porous Metal-film Cathodes (L-cathodes) (Khimicheskoye vozdeystviye kisloroda na elektronnuyu emissiyu poristogo metallo-plenochnogo katoda)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol. II, No.12, pp. 1512 - 1518 (USSR)

ABSTRACT: The method employed for this investigation is similar to that used by Wagener and Kulik (Refs. 2, 3). This consists of measuring periodically the emission of the investigated cathode during its operation in an atmosphere of gas at a certain, constant, known pressure. The measurement of the emission current was done by means of exponential pulses having a duration of about 100 μsec and a repetition rate of about 2 p.p.s. The experimental cathodes were of the rod type, having a diameter of 3 to 5 mm; these were filled with a triple oxide and a tantalum-powder activator; their emissivity was of the order of 3 A/cm^2 at a temperature of 1 000 °C. The effect of the partial oxygen pressure on the emission of the cathodes is illustrated in Figs. 1 to 6. Figs. 1 illustrate the increase in the oxygen pressure as a function of time (in minutes) and the corresponding decay of the emission current. Fig. 2 shows the

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Chemical Action of Oxygen on the Electron Emission of Porous Metal-film Cathodes (L-cathodes)

effect of the oxygen poisoning at a pressure $p = 2.5 \times 10^{-6}$ mmHg at three different temperatures, while Figs. 3 show the poisoning effect and the reactivation of the cathode at $p = 1 \times 10^{-6}$ mmHg and the cathode temperature $T_K = 1\ 010\ ^{o}C$; similar curves for $p = 1.7 \times 10^{-6}$ and $T_K = 1\ 010\ ^{o}C$ - Fig.4. The effect of nitrogen on the emission current of the cathodes is illustrated by the experimental curves of Fig. 7. From these, it follows that the presence of nitrogen is harmless at temperatures higher than 1 100 °C and at pressures lower than 5×10^{-6} mmHg. It was also found that the presence of hydrogen does not poison the cathode, provided it is operated at temperatures above 850 °C and at pressures of less than 10^{-5} mmHg. The main conclusion derived from the investigation is that a satisfactory operation of an L-cathode requires that at operating temperatures of about 1 000 °C, the partial pressure of oxygen be less than 10^{-7} mmHg. The author expresses his gratitude to Corresponding Member of the Ac.Sc.Ukrainian SSR M.D. Morgulis for his valuable advice.

109-12-6/15

Chemical Action of Oxygen on the Electron Emission of Porous Metal-film Cathodes (L-cathodes)

There are 7 figures and 12 references, 6 of which are Slavic.

ASSOCIATION: Physics Institute AS Ukrainian SSR, Kiyev (Institut fiziki AN USSR, g. Kiyev)

SUBMITTED: May 8, 1957

AVAILABLE: Library of Congress

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17

SOLTYK, V. YA.

PHASE I BOOK EXPLOITATION SOV/5789

Nauchno-tekhnicheskaya konferentsiya po razvitiyu proizvoditel'nykh sil Kiyevskogo ekonomicheskogo rayona

Goryachaya obrabotka metallov; trudy konferentsii. vyp. 2. (Hot Working of Metals; Transactions of the Scientific Technological Conference on the Development of the Productive Forces of the Kiyev Economic Region. no. 2) Kiyev, Izd-vo AN UkrSSR, 1960. 142 p. 1000 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Sovet po izucheniyu proizvoditel'nykh sil UkrSSR. Institut liteynogo proizvodstva. Sovet narodnogo khozyaystva Kiyevskogo ekonomicheskogo rayona. Tekhniko-ekonomicheskiy sovet.

Editorial Board: Resp. Ed.: A.A. Gorshkov, Corresponding Member, Academy of Sciences UkrSSR, B.B. Tsizin, Engineer, and F.A. Novikov, Engineer; Ed. of Publishing House: T.K. Remennik; Tech. Ed.: O.A. Kadashevich.

PURPOSE: This collection of articles is intended for technical personnel in machine plants and planning organizations, scientific workers, and teachers in technical schools of higher education.

Card 1/6

COVERAGE: The book is devoted to problems of the introduction of advanced technology and processing in founding and pressworking. Problems in powder metallurgy are also analyzed. No personalities are mentioned. References accompany some of the articles. There are 56 references, mostly Soviet.

TABLE OF CONTENTS:

Hot Working of Metals (Cont.) SOV/5789

SOLTIK, V. Ya.

30977
S/102/60/000/004/001/006
D251/D304

16.8000 (1132)

AUTHOR: Kryzhanovs'kyy, O.M., and Soltyk, V.Ya.

TITLE: On discontinuous extremum control systems with improved dynamic characteristics

PERIODICAL: Avtomatyka, no. 4, 1960, 1 - 12

TEXT: On the basis of the method proposed for improving the dynamic characteristics of continuous extremum systems, described in O.M. Kryzhanovs'kyy's article (Ref. 3: Izv. AN SSSR, OTN Energetika i avtomatika, no. 6, 1959), the authors propose a method for improving the dynamic characteristics of discontinuous extremum systems. The type of impulse filter described in Ya.Z. Shchipkin (Ref. 4: Teoriya impul'snykh sistem (Theory of Impulse Systems) GIFML, M. 1958) makes it possible to obtain the sensitive element of the considered extremum system with improved dynamic properties in the form

$$u_n = a_0 Q^*(e^{-\sigma}) \left\{ \frac{M^*(e^{-\sigma})\Delta y_{n-1}}{\Delta x_{n-1}} \right\}, \qquad (17)$$

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where $M^*(e^{-D})$ is a polynomial in e^{-D} with constant coefficients, constructed with the help of a second impulse filter, u_n is the discrete value of the coordinate of the sensitive element in the n-th interval of time, $Q^*(e^{-D})$ is a polynomial in e^{-D} with constant coefficients, y_n is the discrete value of the coordinate of the extremum function which can be varied on the output of the object, α_5 is a constant coefficient, and D is the usual operator. Suitable schematic circuits are constructed, in which the time lag in the controlled process is compensated by time-delay elements in the control circuits. There are 7 figures and 5 Soviet-bloc references.

ASSOCIATION: Instytut lyvarnoho vyrobnytstva AN URSR (Institute of Foundry Production of the AS UkrSSR)

SUBMITTED: March 3, 1960

86762

S/120/60/000/006/038/045
E041/E335

16.9500 (1031, 1132, 1222)

AUTHOR: ~~Solitylo, V.V.~~

TITLE: Multiposition Automatic Relay Timer

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 6, pp. 128 - 129

TEXT: Most applications of relay timers require multiple facilities and simple programming. The usual circuits with commercial relays are cumbersome and unreliable. The circuit shown in Fig. 1 provides automatic sequencing of 4 events with different time delays. The delays can be set with an accuracy of ± 0.5% in the range 0.5 - 1 000 sec, in any sequence and repeated any number of times. If necessary, the number of facilities may be increased by adding circuits. The time intervals are switched by means of a stepping selector. The recurrence time interval is fixed by the charging of a capacitor (C_7) to the fixed potential of 200 V through resistors (R_2 and R_7) and the firing threshold of a thyratron. Control of this time over a range of 20:1 is by the potential divider R_6. When the thyratron conducts,

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E041/E335

Multiposition Automatic Relay Timer

a contact (PC) opens, allowing current to flow in the coil controlling another contact (PW), which energises the stepping selector (WN). The stator contacts on the selector are connected to the logic circuit of diodes and relay coils (1P, 2P, etc). The delay period commences when the normally open contacts (of PT) close and the negative potential on C_1 is applied to the grid of the twin triode. The discharge period may be varied by adjusting R_1. When current flows in the right-hand portion of the twin triode, a relay (PB) operates and restores the anode supply to the thyratron. The cycle begins again. There is 1 figure.

ASSOCIATION: Institut liteynogo proizvodstva AN UkrSSR (Institute of Foundry Production, AS Ukrainian SSR)

SUBMITTED: October 6, 1959

Card 2/2

KRYZHANOVSKIY, O.M., doktor tekhn.nauk; SOLTYK, V.Ya.; PANASYUK, L.S.

Optimalizing control of billet heating in a soaking pit.
Avtom.i prib. no.3:15-18 Jl-S '62. (MIRA 16:2)

1. Institut liteynogo proizvodstva AN UkrSSR.
(Furnaces, Heating) (Electronic control)

SOLTYK, V.Ya.

Increasing the precision of measurements by automatic recording electronic potentiometers. Priborostroenie no.7:27-28 Jl '62. (MIRA 15:7)

(Potentiometer)

SOLTYK, V.Ya., inzh.

Using optimalizing blast control in cupola process. Mashinostroenie no.4:52-56 Jl-Ag '62. (MIRA 15:9)

1. Institut liteynogo proizvodstva AN UkrSSR.
(Cupola furnaces) (Automatic control)

POZNYAK, L.A.; SHTEYN, F.S.; SOLTYK, V.Ya.; ABRAMOVA, V.P.

Exchange of experience. Zav.lab. 28 no.5:593 '62. (MIRA 15:6)

1. Eksperimental'nyy nauchno-issledovatel'skiy institut kuznechno-pressovogo mashinostroyeniya (for Poznyak, Shteyn). 2. Institut liteynogo proizvodstva AN USSR (for Soltyk). 3. TSentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya (for Abramova).

(Metals--Testing)

KRYZHANOVSKIY, O.M.; SOLTYK, V.Ya.

Optimum control of inertial industrial processes using an optimalizing regulator with improved dynamic properties. Khim. prom. no.2:135-138 F '63. (MIRA 16:7)

1. Institut liteynogo proizvodstva AN UkrSSR.
(Chemical industries)
(Automatic control)

SOLTYK, V.Ya.; KLIBUS, A.V.

Automatic regulation of the blast. Lit. proizv. no.10:15 O '63.
(MIRA 16:12)

ACCESSION NR: AP4040427 S/0302/64/000/002/0043/0046

AUTHOR: Solty*k, Y. Ya. (Candidate of technical sciences); Zhurlivy*y, R. N.

TITLE: Digital time relays

SOURCE: Avtomatika i priborostroyeniye, no. 2, 1964, 43-46

TOPIC TAGS: time relay, digital time relay, industrial automation, industrial automation time relay

ABSTRACT: Conventional time relays are said to have either a considerable number of break contacts which impairs their reliability or (if contactless) are complicated in alignment and operation. A few digital time relays were developed for use in the adaptive control system of a cupola furnace and in the controller of a molten-metal batcher. The new time relay is designed with magnetic logical cells supplied by a special 3-cycle-pulse generator designed with TGZ-0.1/1,3 thyratrons or D227 controlled diodes. The pulse repetition rate is 1—1.5 kc.

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ACCESSION NR: AP4040427

The time delay can be set within 1—40! sec. It is claimed that the error is 0.5% and is independent of the supply-voltage fluctuation within ± 20% and ambient temperature variation within -30+60C. It is further claimed that the new time relay has "a high reliability, small size, and is simple in production and adjustment." The number of elements in two versions of "simplified diagrams" is 147 and 135, respectively! Orig. art. has: 2 figures.

ASSOCIATION: Institut liteynogo proizvodstva AN UkrSSR (Institute of Founding, AN UkrSSR)

SUBMITTED: 00 DATE ACQ: 24Jun64 ENCL: 00

SUB CODE: IE NO REF SOV: 003 OTHER: 000

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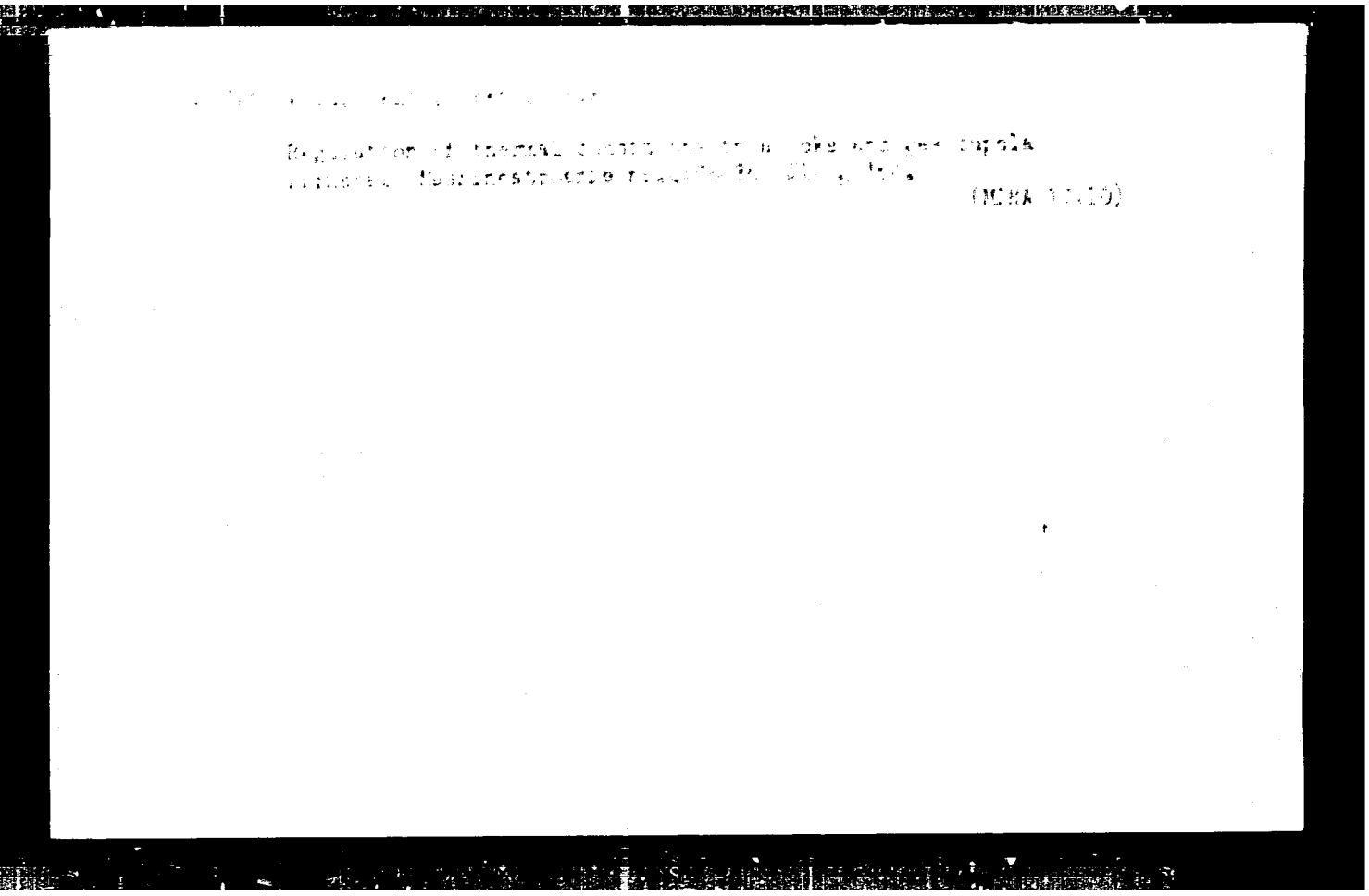

BOLTYK, V.Ya.; TISHCHENKO, V.G.

Pyrometer for noncontact temperature measurement. Zav. lab. 30 no.10:1284-1285 '64. (MIRA 18:4)

1. Institut problem lit'ya AN UkrSSR.

SOLYAK, WITOLD.

Budowa platowcow. (wyd. 1.)

Warszawa, Poland, Panstwowe Wydawn. Techniczne, 1957. 369 p.

Monthly List of East European Accessions (EEAI) LC. Vol. 8, no. 7, July 1959

Uncl.

1(2) PHASE I BOOK EXPLOITATION POL/2379

Soltyk, Witold, Master of Engineering, and Kazimierz Leski, Master of Engineering

Samoloty komunikacyjne (Transport Airplanes) Warszawa, Państwowe Wydawnictwa Techniczne, 1958. 117 p. (Series: Najnowsze konstrukcje lotnicze) Errata slip inserted. 4,135 copies printed.

Reviewer: Stanisław Madeyski, Master of Engineering; Ed. of Publishing House: Eugeniusz Tratkiewicz, Master of Engineering; Tech. Ed.: Bożenna Radzikowska.

PURPOSE: This book is intended for civil aviation personnel, workers in the aviation industry, students of technical schools, high school students, and readers interested in aviation.

COVERAGE: The authors give a brief historical outline of the development of transport aviation and describe in detail modern equipment for passenger and freight air transportation. They describe short, medium, and long range aircraft, tourist air-

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craft and helicopters, and designers' efforts to achieve greater speeds, longer ranges, and more safety and comfort.

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SCITYK, W.

Integral tanks. p. 83.

TECHNIKA LOTNICZA. (Zwiazek Polskich Inzynierow i Techników Lotniczych) Warszawa, Poland. Vol. 14, No. 3, May/ June 1959.

Monthly List of East European accession (EEAI), LC. Vol. 8, No. 9 September, 1959. Uncl.